## **Purpose**

This chapter seeks to identify, identifies soil resource management goals, policies and strategies that 1) preserve, and protect prime soils resources from degradation or conversion to urban uses and loss by through wind and water erosion, 2) preserve and protect watershed function and ecological health through soil conservation, and 3) protect agricultural soils from conversion to urban and residential uses.

<u>ADD SIDEBAR</u> <u>"Everything is built on soils" - Cal Poly Earth and Soil Science</u> <u>Department</u>

<u>ADD SIDEBAR definition of watershed function – Ecological and hydrologic function of watershed includes capture, storage, and safe release of water, provide conditions for nutrient cycles to occur, provide habitat for flora and fauna.</u>

### Introduction

The <u>role that conservation of soils play in County watersheds, through capturing, storing and filtering of water, supporting vegetation and producing valuable food and fiber crops, are <u>directly linked is essential</u> to the future of agriculture in <u>this county</u> and <u>the environment and hence to the vitality of our local economy. Unfortunately, several things can negatively affect this resource. Soil loss and degradation from the erosion from both natural forces of wind and rainfall can be accelerated greatly by and man-made causes can result from urbanization, inappropriate removal of vegetation, overgrazing, cultivation on steep slopes and development without regard to sound conservation practices.</u></u>

ADD SIDEBAR "The nation that destroys its soil, destroys itself." Franklin Delano Roosevelt

ADD SIDEBAR defining soil conservation – Soil conservation is the (i)
Protection of the soil against physical loss by erosion or against chemical
deterioration; that is, excessive loss of fertility by either natural or artificial
means. (ii) A combination of all management and land use methods that safeguard
the soil against depletion or deterioration by natural or by human-induced factors.
Soil Science Society of America

ADD SIDEBAR defining soil protection – Soil protection is the minimizing of unnecessary and irreversible conversion of farmland to nonagricultural uses. Farmland Protection Policy Act of 1981.

# Relationship to Other Elements, Plans, and Programs

Because of the direct connection between soils resources and watershed function,

agricultural viability, erosionecological function, and water <u>quantity and quality</u>, many policies addressing soil resource management conservation can also be found within the Water Resources <u>and Biological Resources</u> chapters of this Element, <u>as well as and in the Agriculture Element</u>, and are referenced herein. <u>Note – it also connects to the Economic</u>, Land Use and Circulation and Safety Elements.

### **Major Issues**

The loss of soil resources <u>has significant economic and environmental</u> <u>consequences</u> <u>affects many other natural resources</u>. <u>Soil erosion These</u> can <u>include</u> reduced agricultural productivity, <u>loss of watershed and ecological function</u>, and reduced <u>air and threaten</u> water quality and harm water-dependent species.

## **Goals, Policies, and Implementation Strategies**

The intent of the following goals, policies and implementation strategies is to protect and retain-conserve soils, and to recognize their that are a critical component of role in the County's watershedsphysical landscape. The soils resources in San Luis Obispo are vital for preserving economic and environmental vitality, nourishing the various vegetative-ecological habitats and are essential for the production of food and fiber.

**Goal SL 1** Important sSoils will be protected from wind and water erosion, particularly that caused by poor soil management practices that are essential to agriculture will be conserved.

**Goal SL 2** Watersheds and <u>ecological function will be maintained through soil conservation.</u><del>their soils and vegetation will be protected</del>

Goal SL 3 Agricultural soils identified as Prime Farmland of Local importance will be conserved.

# Goal 1

GOAL 1 Important sSoils will be protected from wind and water erosion, particularly that caused by poor soil management practices. that are essential to agriculture will be conserved.

### Policy SL 1.1 Prevent Loss of Topsoil in All Land Uses

Minimize the loss of topsoil by encouraging broad-based cooperation between property owners, agricultural operators, agencies, and organizations that will lead to effective soil conservation practices, on farmlands and on county-controlled properties (AGP9) (Refer to Figure SL-1 Countywide Soils Map)

## Implementation Strategy SL 1.1.1 (consolidation of 1.1.1 and 1.1.3)

Encourage landowners to participate in programs that reduce soil erosion and increase maintain soil productivity. The County Department of Agriculture should participate in efforts to educate property owners and agricultural operators about soil conservation through programs developed cooperatively by agencies such as Promote coordination

between the <u>USDA</u> Natural Resources Conservation Service, <u>and</u> Resource Conservation Districts, <u>University of California Cooperative Extension</u>, <u>Consolidated Farm Services Agency</u>, <u>Morro Bay National Estuary Program</u>, and other <u>technical</u> service providers. <u>agencies and organizations</u>.

### **■ Implementation Strategy SL 1.1.2**

Assure that roads and drainage systems on county-controlled properties and facilities do not negatively impact <u>other land uses including</u> agricultural lands, and that the roads and drainage systems are properly maintained.

ADD SIDEBAR The soil is the great connector of our lives, the source and destination of all. Wendell Berry, 1977

### **■ Implementation Strategy SL 1.1.3 (Consolidated with 1.1.1)**

\_The County Department of Agriculture should participate in efforts to educate property owners and agricultural operators about soil conservation through programs developed cooperatively by agencies such as Resource Conservation Districts, the Consolidated Farm Services Agency, University of California Cooperative Extension, the U.S. Natural Resources Conservation Service, and the Morro Bay National Estuary Program. Educational efforts should use all available information and avoid duplication of effort.

# Policy SL 1.2 2.2 Promote Soil Conservation Practices in All Land Uses Protect Upland Vegetation (former SL 2.2)

Require <u>erosion and sediment control practices during</u> development <u>or other and</u>-soil-disturbing activities on steep slopes and ridgelines. <u>These practices should to protect downslope areas from erosion and disperse storm-water so that it infiltrates the soil rather than running off, and to protect downslope areas from erosion adequately to allow for effective infiltration. (Also refer to SL 2.4)</u>

### **■ Implementation Strategy SL1.2.1** 2.2.2 (former 2.2.2)

Retain natural vegetation and topography to the maximum extent feasible for all discretionary projects within 300 feet of blue line streams or in areas designated with at least moderate erosion potential.

### Implementation Strategy SL 1.2.2 2.2.3 (former 2.2.3)

Require proposed discretionary development to restore degraded and eroded areas where feasible by replanting with native vegetation and using other measures approved by soil conservation agencies.

# Policy SL 1 2.3 <u>Minimize Erosion associated With New Development</u> (former 2.3)

Avoid development, including roads and driveways, on the steeper portions of a site except when necessary to avoid flood hazards, protect prime soils, and protect sensitive biological and other resources. Avoid grading and site disturbance activities on slopes over 30%. Minimize site disturbance and protect existing vegetation as much as possible.

### Implementation Strategy SL 1.3.1 2.2.1 (former 2.2.1)

Implement Low Impact Development (LID) for all new public and private projects. (Also refer to WR 4.8)

### Implementation Strategy SL 1.3.2 2.3.1 (former 2.3.1)

Amend the Land Use Ordinance to require a Variance to grade on slopes over 30%.

### **Policy SL 1.2 Protect Important Agricultural Soils**

Avoid buildings, impermeable surfaces, and other non-agricultural uses on soils classified by the Natural Resources Conservation Service as Prime Farmland and on soils of statewide and local importance. (Refer to Figure SL-2 Countywide Prime Farmlands Soils Map and Figure SL-3 Countywide Farmland Mapping and Monitoring Program)

### **■ Implementation Strategy SL 1.2.1**

Update the Department of Planning and Building digital map database of soils classified as Prime Farmland, as well as soils with similar physical and chemical characteristics.

### - Implementation Strategy SL 1.2.2

Coordinate with the Agriculture Commissioner's Office to propose amendments to the Land Use Element and Land Use Ordinance to revise the list of allowable uses in the Agriculture land use category and limit placement of structures on Prime Farmland and on soils of statewide and local importance identified on soils maps.

### **Implementation Strategy SL 1.2.3**

Coordinate with the Resource Conservation Districts (RCDs) and local agencies during the discretionary review of development projects that may affect important soils resources.

### **■ Implementation Strategy SL 1.2.4**

Establish mitigation strategies for loss of soils. For example, consider off-site compensation, including a fee-based mitigation program for loss of soils as a result of converting productive agricultural land to non-agricultural uses.

# Goal 2

GOAL 2 WATERSHEDS AND ECOLOGICAL FUNCTION THEIR SOILS AND VEGETATION WILL BE PROTECTED MAINTAINED THROUGH SOIL CONSERVATION.

### Policy SL 2.1 Protect Watersheds and Aquifer Recharge Areas

Give high priority to protecting watersheds, aquifer-recharge areas, and natural drainage systems when reviewing applications for discretionary development. Protection of watersheds and groundwater recharge goals and strategies are integrally woven through both the Water and Biological Resources Chapters. It is important to provide coordination between these Chapters. (Also refer to WR 2.4, 3.1, 3.2, 3.3, 3.4, 3.5, 5.1, 5.6, 6.4, 6.5, 6.6, 6.7 and BR1.5, 2.7, 4.1, 4.5, 4.6, 6.1 and 7.7)

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Create a comprehensive Cooperate with agencies like the Central Coast Regional Water Quality Control Board and California Department of Water Resources, County Public Works as well as other County departments, to strengthen existing digital map database of watersheds and aquifer recharge areas like the Central Coast Ambient Monitoring Program's CCAMP Data Browser (http://www.ccamp.org/) and the California Department of Water Resources California's Groundwater Bulletin 118 (http://www.groundwater.water.ca.gov/bulletin118/).

### Implementation Strategy SL 2.1.2

Encourage educational efforts about preservation of watershed function and retention of natural drainage areas that supports the implementation of low impact development practices.

### ■ Implementation Strategy SL 2.1.3

Encourage the use of soil conservation practices in development designs near streams and stream crossings that protect the natural stream functions. Refer to BR 6

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<u>Encourage the c</u>Coordinat<u>ion of</u>e watershed restoration activities <u>and permit streamlining efforts</u> with efforts by other <u>between the County, state and federal</u> agencies and <u>other groups</u>, <u>and simplify the permit approval process</u> for watershed restoration and enhancement projects <u>where they support soil conservation practices</u>.

### **Policy SL 2.2 Protect Upland Vegetation**

Require development and soil-disturbing activities on steep slopes and ridgelines to protect downslope areas from erosion and disperse run off adequately to allow for effective infiltration. (Also refer to SL 2.4)

#### Implementation Strategy SL 2.2.1

Implement Low Impact Development (LID) for all new public and private projects. (Also refer to WR 4.8)

#### Implementation Strategy SL 2.3.1

Amend the Land Use Ordinance to require a Variance to grade on slopes over 30%.

# Goal 3

### **GOAL SL 3 IMPORTANT AGRICULTURAL SOILS WILL BE CONSERVED.**

# Policy SL 3.1 1.2 Protect Conserve Important Agricultural Soils of SLO County

Important agricultural soils (as mapped by the USDA Natural Resources Conservation Service and including Prime Farmland, Soil of Statewide Importance, Other Productive Soils, and Highly Productive Rangeland Soils - see glossary for definitions) shall be

conserved. Specific soil map units meeting these definitions may be found listed in Appendix SL-?? and mapped in Figure SL-???.

### Implementation Strategy SL 3.1.1 (former SL 1.2)

<u>Limit placement of non-agricultural structures and impermeable surfaces on Important</u> Agricultural Soils of SLO County

Avoid b uildings, impermeable surfaces, and other non-agricultural uses on soils classified by the Natural Resources Conservation Service as Prime Farmland and on soils of statewide and local importance. (Refer to Figure SL-2 Countywide Prime Farmlands Soils MapAppendix SL-?? and Figure SL-??)3 Countywide Farmland Mapping and Monitoring Program)

### Implementation Strategy SL 3.1.2 1.2.1 (former 1.2.1)

Update the Department of Planning and Building's digital map database of soils classified as <u>Important Agricultural Soils of SLO CountyPrime Farmland</u>, as <u>well as soils</u> with similar physical and chemical characteristics <u>designated in Appendix ?? and Figure ???</u>.

### Implementation Strategy SL 3.1.3 1.2.2 (former 1.2.2)

Coordinate with the Agriculture Commissioner's Office to propose amendments to the Land Use Element and Land Use Ordinance to revise the list of allowable uses in the Agriculture land use category and limit placement of structures on Prime Farmland and on soils of statewide and local importance identified on soils maps. (mary to provide words) Important Agricultural Soils of SLO County as identified in Appendix SL-?? And Figure SL-???.

### **■ Implementation Strategy SL 3.1.4 1.2.3 (former 1.2.3)**

Coordinate with the Resource Conservation Districts (RCDs) and local agencies during the discretionary review of development projects that may affect important soils resources. (Mary to provide words)

#### **■ Implementation Strategy SL 3.1.5** 1.2.4 (former 1.2.4)

Establish mitigation strategies for loss of <a href="Important Agricultural ss">Important Agricultural ss</a>oils. The preferred mitigation practice for loss of Important Agricultural Soils is an agricultural land conservation easement. For example, consider off-site compensation, including a feebased mitigation program for loss of soils as a result of converting productive agricultural land to non-agricultural uses.

# **Summary of Implementation Strategies**

For each implementation strategy described in this chapter, the following table (**Table SL-1**) summarizes the County department or other agency that has primary responsibility for carrying out that strategy. In addition, the table summarizes the priority, estimated year of initiation, and potential source of funding of each strategy. The actual timeframe for implementing the strategies is dependent upon the availability of adequate staff and funding.

## **Glossary Info**

<u>Definitions for the glossary under the heading Important Agricultural Soils of SLO County:</u>

Prime Farmland is defined by the USDA NRCS in the Code of Federal Regulations for Agriculture (http://www.access.gpo.gov/nara/cfr/waisidx 00/7cfr657 00.html), and referenced in the California Coastal Act of 1976. Prime Farmland designation is based on soil physical and chemical criteria, whether or not land is actually irrigated (provided that irrigation is feasible). Prime Farmland is identified and mapped as per the Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/). Soil map units mapped as Prime Farmland may be found in Appendix SL-?? and Figure SL-??

Soil of Statewide Importance is defined by the USDA NRCS in the Code of Federal Regulations for Agriculture

(http://www.access.gpo.gov/nara/cfr/waisidx\_00/7cfr657\_00.html). Soil of Statewide Importance designation is based on soil physical and chemical criteria, whether or not land is actually irrigated (provided that irrigation is feasible). Soil of Statewide Importance is identified and mapped as per the Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/). Soil map units mapped as Soil of Statewide Importance may be found in Appendix SL-?? and Figure SL-??.

Other Productive Soils meet the definitions of Unique Farmland, as defined by the USDA NRCS in the Code of Federal Regulations for Agriculture

(http://www.access.gpo.gov/nara/cfr/waisidx\_00/7cfr657\_00.html), and shall meet 2 of the following minimum criteria that are identified on Web Soil Survey:

CA Revised Storie Index is good or excellent

Slope is less than 30%

Irrigated Capability is less than 7

More than 3% of the soil type is in irrigated/permanent crop use Soil map units designated as Other Productive Soils may be found in Appendix SL-??

and Figure SL-??.

<u>Highly Productive Rangeland Soils shall-meet the following three main criteria as</u> identified on Web Soil Survey:—

- 1) Includes the top 40% forage producting soil types, i.e. the map units and soil names with the soil surveys.
- 2) Slopes less than 30%.
- 3) The predominate vegetation is herbaceous forage versus brush.

A percentage (to be determined) of maximum Average Forage Production, based on map unit location within soil survey boundaries

Slope is less than 30%

CA Revised Storie Index is fair or better (to be determined)

Soil map units designated as Highly Productive Rangeland Soils may be found in Appendix SL-?? and Figure SL-??.

Citation for California Revised Storie Index:

O'Geen, A.T., S.B. Southard, R.J. Southard.2008. A revised Storie Index for use with digital soil information. Regents of the University of California Agriculture and Natural

Resources Publication 8335. http://anrcatalog.ucdavis.edu/pdf/8335.pdf (accessed 3/06/09).

Citation for Rangeland Criteria:

Bill Weitkamp. 1975. The Influence of Climate on Range Forage Production in San Luis Obispo County. Farm Advisor Facts. 2156 Sierra Way, Suite C. San Luis Obispo, CA 93401.

<u>USDA Farm Service Agency, County Office Committee.</u> 2009. <u>USDA FSA office. 65 S. Main Street, Suite 106. Templeton, CA 93465</u>